Original Article

Awareness and Use of Emergency Contraception among Women of Reproductive Age Attending Tertiary Hospitals in Rawalpindi: A Cross-sectional Study

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Abstract

Background: Emergency contraception (EC) - the 'best kept secret' of reproductive health - is an oft-neglected subject. Although a variety of forms and initiatives promoting ECs are available, ECs are highly underutilized. For instance, 88% of women in Pakistan were unaware of ECs.

Objectives: Our study aims to shed light on the awareness of Emergency contraceptives and their use among women presenting to the OPD of the gynecology department in public tertiary hospitals of Rawalpindi, Pakistan.

Materials and Methods: A descriptive, cross-sectional study, using a validated questionnaire, was conducted in June 2025 on 107 women selected by convenience sampling. We used SPSS v27 for data analysis. Awareness and use of EC were measured; the Chi-square test of independence was used to assess the association of different demographic variables with awareness of ECs, and binary logistic regression analysis was applied for significant demographic variables using awareness and no awareness as outcome variables.

Results: Out of the 107 participants, 33.6% of the participants had heard about EC, while only 0.9% had ever used it. Most of the participants (72%) knew that EC use is not the same as abortion. Furthermore, 34.6% of women affirmed that they would use ECs if they had more information regarding them. Participants with below a college education were 66% less likely to have heard about ECs than those with a college education. A p-value of <0.05 and 95% CI was adopted.

Conclusion: This study concludes that awareness and use of ECs are lacking among the target population because of various factors, including misconceptions.

Keywords: Awareness (D001364), Emergency contraception (D044363), Tertiary hospital (D062606)

Introduction

Every year, 74 million women in low- and middle-income (LMIC) nations become pregnant against their will, which results in 47,000 maternal deaths and 25 million unsafe abortions.[1] This emphasizes the need for some form of contraception – particularly Emergency contraception (EC) - to avoid these unintended pregnancies. However, despite its importance, EC is referred to as the 'best kept secret' of reproductive health; many women don't know that EC exists, don't know how to use it safely, or don't utilize it when necessary.[2]

Currently, many different forms of emergency contraception, including the use of progesterone receptor modulators, combination of estrogen and progesterone, progestin alone, and post-coital insertion of copper or LNG intrauterine device, are available to prevent unwanted pregnancies.[3] One type of post-coital contraception that lowers the risk of pregnancy is the emergency contraceptive pill (ECP), which delays ovulation or prevents implantation.[4] If taken within 72 hours of unprotected sexual intercourse, ECPs can prevent unwanted pregnancies by over 95%.[5] It is, however, crucial to remember that after implantation has taken place, emergency contraception is no longer effective.[6]

Throughout the past, there have been several national and international initiatives to promote contraception in the best interest of maternal health and of society. For instance, family planning is a major population control tool in Ghana.[7] Unfortunately, many barriers have prevented the desired results from these initiatives.

The reluctance to use any method of contraception is more so in the developing and underdeveloped nations. There are many factors contributing to this, including social, cultural, and religious hurdles, but concerns about side effects and inadequate or incorrect understanding are two of the biggest obstacles to the use of contraception worldwide.[8]

In Pakistan, the situation is not different. Approximately 0.4% of married women in Pakistan use ECPs, according to commodity dispensed data for ECPs in 2021.[9] Along with the afore-mentioned factors for the neglect of ECs, male-dominance is also an important factor that leads to the under-utilization of ECs in our society. Also, there are many myths and misconceptions regarding contraception. So, among its neighbors, Pakistan has the lowest rate of contraceptive method use compared to the average of 53% in South Asia.[10]

Very few studies have focused on gauging the level of awareness and use of emergency contraceptives in our society. Most of them have been limited to Karachi. However, there are people from several differing racial and cultural backgrounds in Pakistan. Their perspectives on ECs vary. Our study assesses the awareness of emergency contraceptives and their use among women presenting to the gynecology OPD of the tertiary hospitals in Rawalpindi. To the best of our knowledge, no similar hospital-based study has been conducted in Rawalpindi so far.

Materials and Methods

A descriptive cross-sectional study was conducted over a period of four months in the gynecology outpatient departments of three

public tertiary hospitals in Rawalpindi: Benazir Bhutto Hospital, Holy Family Hospital, and Rawalpindi Teaching Hospital.

The study included women aged 15 to 49 years who presented to the OPD of the gynecology department of public tertiary hospitals in Rawalpindi in the specified time duration and were able to understand either Urdu or English. Those women who were unmarried, had undergone permanent sterilization such as tubal ligation or hysterectomy or had any cognitive impairment or psychiatric illness affecting consent or reliable response were excluded from the study.

Based on the assumption of 7.5% (p) of awareness about Emergency Contraception in a previous study11, the Cochrane formula was used to calculate the sample size (with 95% confidence interval and a 5% margin of error). The sample size was calculated to be 107. Participants were selected using a non-probability convenience sampling technique.

Data were collected using a pre-validated questionnaire adapted from the Family Planning Association of Hong Kong. The questionnaire consisted of 4 parts. Part 1 was about the Background Information of the participants, part 2 was about the details of any Contraception being used by the participants at that moment, part 3 was about the Knowledge of Emergency Contraception, and part 4 was regarding the Views on Emergency Contraception. Interviews were conducted privately, and responses were securely recorded in a password-protected Google Form to maintain confidentiality.

The IRB committee of Rawalpindi Medical University reviewed and approved the study. We obtained informed consent from all the participants and maintained complete confidentiality. No one had access to data obtained from the participant except researchers, and no names were attached to the questionnaire. Moreover, no misleading information is given. We avoided using deceptive methods and granted participants the right to opt out of the study if they so desired.

Data was entered, coded, and analysis was performed using SPSS version 27. Descriptive statistics were used to summarize the data, and categorical variables are represented as frequencies. A Chi-square test of independence was applied to assess the association between the awareness of EC and different demographic variables of the participants. Binary logistic regression analysis was done for the significant demographic variable using awareness and no awareness as outcome variables. A p-value <0.05 and a 95% confidence interval were considered statistically significant for all analyses.

Results

The study involved a total of 107 married women. The majority of the participants were in the age group 26-35 years (46.7%) with a mean age of 31 years. The mean education level was 13th grade, and the mean number of children was 2.22 per woman. The mean income was 40,000 rupees per month. The socio-demographic characteristics of the participants are represented in Table 1.

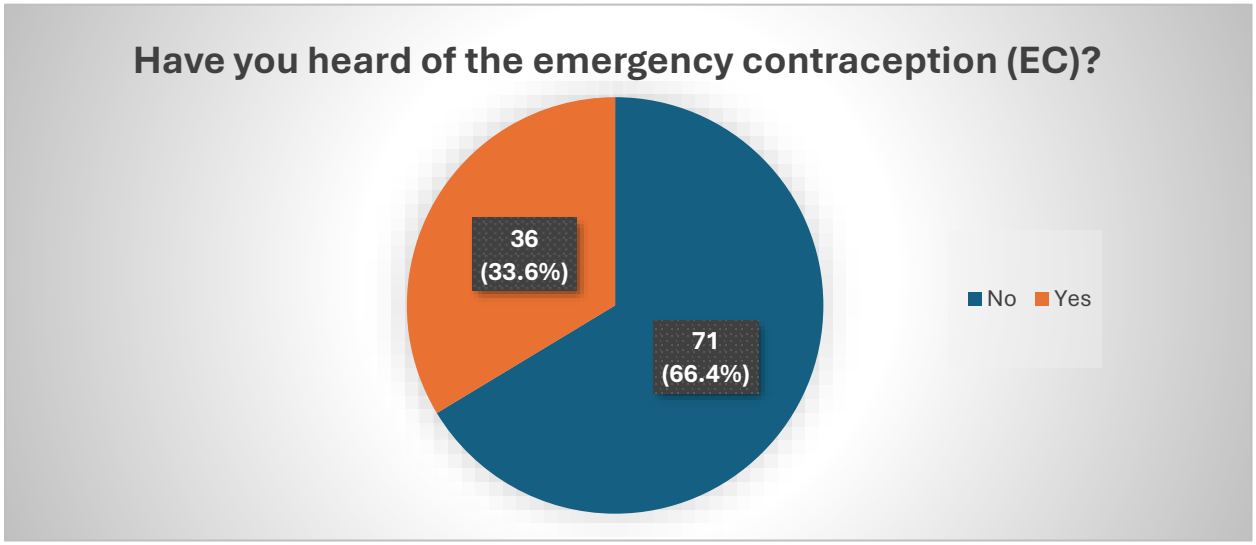
Table 1 *Sociodemographic Characteristics of The Study Participants*

Demographic Variables	Frequency (Percentage)
Age	
15-25	28 (26.2)
26-35	50 (46.7)
36-49	29 (27.1)
Education Status	
Below College	71 (66.4)
Above College	36 (33.6)
Children	
0-1	36 (33.6)
2-3	54 (50.5)
4-5	13 (12.2)
>5	4 (3.7)
Employment Status	
Employed	6 (5.6)
Housewife	100 (93.5)
Student	1 (0.9)
Family Income Status	
Below 50000 PKR	73 (68.2)
Above 50000 PKR	34 (31.8)
Already using contraception	
Yes	91 (85.0)
No	16 (15.0)

Note. Data presented as frequencies (percentages).

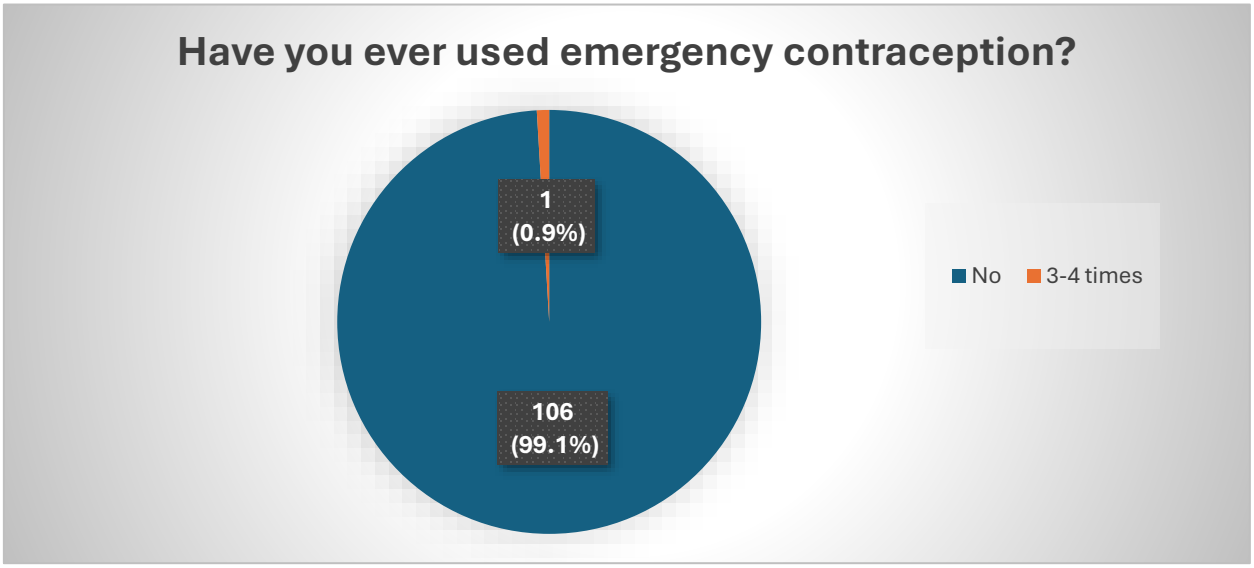
In our study, 33.6% of the participants had heard about ECs (Figure 1), whereas only 0.9% had ever used them. (Figure 2).

Figure 1 *Awareness of Emergency Contraception (EC) among the participants*



Note. Awareness of ECs at the time of study.

Figure 2 *Use of Emergency Contraception among the participants*



Note. Use of ECs at the time of study.

When asked about the acceptability of ECs, 9 participants (8.4%) found both pills and IUDs, acceptable for emergency contraception, 32 (29.9%) preferred pills, 16 (15.0%) preferred an intrauterine device (IUD), while 50 (46.7%) were unsure about their preference. The most prominent reasons behind their specific preferences, as reported by 25.2% of respondents, were ease and simplicity of use, followed by the ability to be used as long-acting contraception (13.1%) as well. The remaining preferences were divided among improved efficacy, less invasiveness, fewer side effects, and the worry that IUDs could cause pregnancy (hence the preference for pills).

In our study, 72% of the women knew ECs are not a form of abortion while 8.4% considered their use as abortion. 19.2% of the women were unsure about it.

When asked about the possibility of becoming pregnant in case of failure of contraception, 73.8% of the participants affirmed that, if that was to happen, they would take the pregnancy to terms, 7.5% believed they would terminate the pregnancy while 18.7% were unsure. Furthermore, 34.6% of the participants believed that if they get more knowledge about ECs, they would be more likely to use them. 35.5% of the participants thought that they would still not use them while 29.9% of the participants were unsure. Lastly, 72% of the participants preferred to get ECs via face-to-face consultation instead of any other means e.g., pharmacies.

Chi-square test of independence showed that awareness about ECs was only associated with the educational status of participants ($p=0.010$). This is represented in **Table 2**. Awareness regarding ECs was not associated with the age group of participants ($p=0.250$) or with any other demographic variable.

Table 2 *Chi-square Test Showing Association Between Education Status of The Participants and Awareness of ECs*

Variables	Awareness about ECs			P-value
	No	Yes	Total (n=107)	
Education				0.010
Below college	53	18	71 (66.3)	
Above college	18	18	36 (33.6)	
Age				0.250
15 to 25 years	22	6	28 (26.1)	
26 to 35 years	32	18	50 (46.1)	
36 to 49 years	17	12	29 (27.1)	

Note. Statistically significant at p<0.05

Since education was a significant variable, we ran a binary logistic regression analysis between education and the awareness level of participants. **Table 3** reveals that participants with below college education had significantly lower odds of being aware of ECs than those with above college education (OR = 0.340, 95% CI = 0.146 – 0.790, p =0.012-0.146)

Table 3 *Binary Logistic Regression Analysis Showing the Odds Ratio of Association of Education Status with Awareness Regarding Emergency Contraception*

Variable	Have you heard of Emergency Contraception		Total (%)	OR	p-value	
	Yes	No			LL	UL
Education				0.340	0.012	0.146
Below college	18	53	71 (66.4)			
Above college	18	18	36 (33.6)			

Note. Statistically significant at p<0.05

Discussion

The findings of our study reveal that 33.6% of women were aware of Emergency contraception (EC); they had heard about it from their friends, family members, at the hospital, or from social media and the internet. Our findings are consistent with a number of previous studies, including one that was carried out in rural Delhi, and it reported an awareness level of 34.1%.[13]

However, there was a stark difference between having heard about EC (awareness) and its use. Only 0.9%, or 1 woman in our sample size, had ever used Emergency contraception. Khan SA et al reported that 7.5% women had used ECs in their study.[11] There can be several reasons behind the difference in the results of our study and that of Khan SA et al. For example, our study was conducted at public tertiary hospitals in Rawalpindi that are frequented by patients who mostly belong to the lower class and are not very educated. However, the other was at a CMH where many patients belong to the upper or middle class and are generally well-informed on such subjects. This difference in social status and level of

knowledge can account for the difference in the results.

It is also pertinent to note that our study proves a significant association between level of education and awareness of ECs. Only 25.4% of women educated below college were informed about ECs as compared to 50% of college or above degree holders who had information about ECs. The association between level of knowledge and awareness or use of ECs has been validated by various other researchers as well. For instance, Abdullah M et al confirmed a significant association between level of education and awareness of ECs in their study conducted in Karachi, Pakistan.[14]

In our study, there was no significant association between other demographic variables e.g. age, parity, employment status, income and current use of contraception. Abdullah M et al also proved that age, parity and employment status were not associated with contraception use; however, respondents who were already using some method of contraception had a significant association with awareness of ECs in their research.[14] This difference can be explained by the ratio of women who were using any method of contraception in both the studies. In our study, only 15% of the women were using some method of contraception whereas 47.5% of the women were using contraceptives in the research conducted by Abdullah M et al.[14]

In our society, traditional beliefs and various myths and misconceptions govern decisions on such subjects. 73.8% of the women in our study were of the view that they would take the pregnancy to term in case they became pregnant due to failure of contraception. This is because of religious beliefs. However, it must be highlighted that many women do not view that contraception use contradicts Islamic teachings as proven in previous research.[11] Also, 72% of the women in our study maintain that ECs are not a form of abortion. In another study, only 25.7% of the participants viewed ECs as abortifacient.[15] These perceptions can be viewed as a positive step in increasing the utilization of ECs.

Though 50% of the participants were unsure about their preference, more participants (29.9%) preferred oral contraceptives over IUD (15%). Among those who had a specific reason for their preference, 25.2% of the participants preferred ease and simplicity of use. These results emphasize the need to make those ECs available that cater to the specific needs of most of the candidates.

However, before that is done, 50% of the participants who were unsure about their preference need to be given more information about the ECs so they can reach a conclusion. The lack of knowledge is a major void that needs to be filled for optimum outcomes. We have previously mentioned that, in our research, 34.6% of the participants think that if they had more knowledge about ECs, they were likely to use them.

Nevertheless, 35.5% of the participants said that, even if they are given more knowledge about ECs, they are unlikely to use them. This is because of the role of various myths and misconceptions surrounding EC use as well as societal pressure. Various studies in Pakistan and neighboring countries support the fact that the influence of the husbands, that of the community in general and various social taboos play an instrumental role in the

woman's decision regarding the use of contraception.[10,16,17] The misconceptions also stem from misleading of the society regarding the side effects of ECs.[14]

There is a dire need to promote contraception in general and ECs in particular to avoid unintended pregnancies. This can be done through various means. First and foremost, it is important to apprise other members of the woman's family, especially their husbands, regarding the need for ECs. A study conducted in Syria in 2024 revealed that 64% of the men had limited knowledge of ECs even though they were degree holders.[18] Pakistan, being a developing country, is no different and, being a male-dominated society, there is a strong need to convince the male members of the society regarding the contraceptive needs of women.

Secondly, various means should be employed to negate the myths and misconceptions surrounding the use of ECs. Researchers point out that the media, along with healthcare providers, can be a highly valuable source of information regarding EC.[11,19] Print, electronic and social media can perhaps play the most significant role in spreading awareness regarding the need for ECs in a country like Pakistan.

Moreover, given the fact that religious beliefs and societal norms govern most of the decision-making processes in our community, there is a dire need to involve the clerics and the community leaders in this aspect as well. This has been seconded by Shah NZ et al.[10] Once they are convinced of the positive change that the use of ECs can bring, it will be a significant step in increasing the contraceptive prevalence rate (CPR).

Lastly, we must take note of the way in which the women will wish to obtain the ECs if we want to increase their use. In our study, 72% of the participants preferred obtaining them through face-to-face consultation. Doctors and health-care workers should be encouraged to offer ECs through face-to-face consultation rather than relying on various other means.

We must acknowledge some limitations of our study. Firstly, the sample size is small. Secondly, this study was conducted in three public tertiary hospitals of only one city, Rawalpindi, so it cannot be generalized to the population of the entire country. Thirdly, the patients presented to public hospitals mostly belong to a low socio-economic status, which once again limits the generalizability of the study. Lastly, many people did not consent to be a part of this study because discussing such matters in public is not considered the norm in our society.

Future studies should focus on a more generalizable study on this topic with a larger sample size. Both patients from public and private tertiary hospitals should be included in the study to have a comparable representation of people belonging to different socio-economic classes and having varied knowledge on such subjects. Lastly, there is a dire need for the government and NGOs to find ways to increase the awareness and utilization of Emergency contraception if we are to reduce the fertility rate, prevent unintended pregnancies, and improve maternal health outcomes.

Conclusion

In our study, 33.6% of the participants have heard about ECs whereas only 0.9% have ever

used them. Participants with an education level of below-college were less aware of ECs than those with an above-college education. Education plays an instrumental role in creating awareness regarding such subjects. This study also emphasizes the need to employ various means to increase awareness and use of ECs as an important step towards avoiding unwanted pregnancies and improving maternal health.

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